

WHAT IS CLAIMED IS:

1. A spot joining method comprising the steps of:

rotating a joining tool having a pin at a tip end portion thereof around an axis of the joining tool with the pin pressed against a predetermined joint spot of lapped works to be joined, the pin being protruded along the axis; inserting the pin into the predetermined joint spot of the lapped works heated and softened due to friction heat; stirring portions of the lapped works that are in the vicinity of the predetermined joint spot by using the rotating pin and fusing the lapped works at the predetermined joint spot; and pulling out the joining tool along the axis, thereby performing spot joining of the lapped works at the predetermined joint spot.

2. The spot joining method according to Claim 1, wherein a receiving member having a flat receiving face on which the lapped works are placed is provided opposite to the tip end portion of the joining tool to receive a pressing force from the joining tool pushing against the lapped works.

3. A spot joining device comprising:

a joining tool having a pin at a tip end portion thereof, the pin being protruded along an axis of the joining tool;
a first motor for rotating the joining tool around the axis thereof; and
a second motor for moving the joining tool along the axis thereof, wherein the joining tool is moved along the axis by the second motor while the joining tool is rotated by the first motor, the pin is pressed against a

predetermined joint spot of lapped works to be joined and is inserted into the predetermined joint spot heated and softened due to friction heat, portions of the lapped works that are in the vicinity of the predetermined joint spot are stirred by using the rotating pin, the lapped works are fused at the predetermined joint spot, and the joining tool is pulled out along the axis by the second motor, whereby the lapped works are spot-joined at the predetermined joint spot.

4. The spot joining device according to Claim 3, wherein the first motor is one of an induction motor and a servo motor and the second motor is the servo motor.